

REMARKS

In an Office Action mailed on February 14, 2005, claims 1, 7, 11, 17, 21 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ernstoff in view of Berlin; claims 1, 2, 4, 6, 8, 11, 12, 14, 16, 18, 21, 22, 24 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brandinger in view of Berlin; claims 29-31 and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brandinger in view of Berlin and further in view of Hewlett; and claims 3, 5, 9, 10, 13, 15, 19, 20, 23, 25, 28 and 32 were objected to as being dependent upon rejected base claims but were indicated as being allowable if rewritten in independent form. Claims 2, 12 and 22 have been cancelled. The § 103(a) rejections are discussed in the corresponding section below.

Rejections of Claims 1, 4, 6-8, 21, 24, 26 and 27:

As amended, the apparatus of independent claim 1 and the projection system of independent claim 21 each includes a mirror array to form a projected image that includes pixels. The mirror array includes mirrors. Furthermore, the apparatus of independent claim 1 and the projection system of independent claim 21, as each amended, includes a circuit to, for each pixel, control the mirror array to control the number of the mirrors that reflect light into an optical path that intersects a location of the pixel based on an intensity for the pixel.

Contrary to the limitations of amended independent claims 1 and 21, none of the cited references teaches or suggests the circuit that controls the number of mirrors that reflect light into an optical path based on an intensity for a pixel. To the contrary, Ernstoff generally describes a system that uses pulse with modulation for purposes of controlling a pixel intensity. The Examiner refers to lines 1-7 in column 5 of Ernstoff to allegedly support the contention that Ernstoff teaches combining at least two mirrors of an array to regulate an intensity of a pixel. Office Action, 2. However, referring to this cited language, the cited language merely describes that the timing and control circuit 20 coordinates changes in an intensity of a light source 12 in synchronization with data input signals to achieve a desired grayscale intensity. Thus, the cited language does not teach or suggest the circuit of independent claims 1 and 21.

Regarding Berlin, Berlin generally describes a fault tolerant projection display system that shifts the positions of mirrors in a mirror array for purposes of accommodating a failed mirror. However, there is no teaching or suggestion in Berlin regarding a circuit that controls a

number of mirrors that reflect light into an optical path that intersects a location of a pixel based on an intensity for the pixel.

Regarding Brandinger, Brandinger generally describes a laser beam shaping device that includes a micro mirror array 12. In line 44-46 in column 4 of Brandinger, Brandinger states, "the computer 16 is programmed by the input 17 to move the mirrors to partially reflect its positions to spatially vary the laser beam energy profile." However, Brandinger does not teach or even suggest controlling the number of the mirrors that reflect light into the path for purposes of controlling a pixel intensity. Thus, regardless of the actual laser beam profile, Brandinger discloses controlling the amount of light reflected by the same number of mirrors of the micro mirror array 12. Therefore, Brandinger fails to teach or even suggest the limitations of amended independent claims 1 and 21.

Thus, for at least the reason that neither Brandinger, Berlin nor Ernstoff teaches or suggests the circuit of independent claims 1 or 21, independent claims 1 and 21 overcome the § 103(a) rejections.

Claims 4, 6-8, 21, 24, 26 and 27 are patentable for at least the reason that these claims depend from allowable independent claims. Therefore, for at least the reasons that are set forth above, withdrawal of the § 103(a) rejections of claims 1, 4, 6-8, 21, 24, 26 and 27 is requested.

Rejections of Claims 11, 14 and 16-18:

As amended, the method of independent claim 11 recites using a mirror array to form a projected image that includes pixels. The mirror array includes mirrors. The method also includes controlling the mirror array for each pixel to control the number of mirrors that reflect light into an optical path that intersects a location of the pixels based on an intensity for the pixel.

Contrary to the limitations of amended independent claim 11, neither Brandinger, Berlin nor Ernstoff teaches or suggests controlling a mirror array to control the number of mirrors of the array that reflect light into an optical path that intersects a location of a pixel based on an intensity for the pixel. See discussion of independent claims 1 and 21 above. Thus, Berlin generally describes a fault tolerant system but does not teach or suggest the controlling of claim 1. Although Brandinger generally describes selectively combining intensities from a fixed number of mirrors to control a laser beam profile, Brandinger does not teach or even suggest

controlling the number of the mirrors that are used to form a pixel intensity. Ernstoff discloses a pulse width modulation technique to control the intensity of a pixel and does not teach or suggest controlling the number of mirrors to control the pixel intensity, as set forth in amended independent claim 11.

Claims 14 and 16-18 are patentable for at least the reason that these claims depend from an allowable independent claim 1. Therefore, for at least the reasons that are set forth above, withdrawal of the § 103(a) rejections of claims 11, 14 and 16-18 is requested.

Rejection of Claim 29:

As amended, the projection system of independent claim 29 includes a flash memory that stores instructions to cause a processor to, for each pixel of a projected image, control the number of mirrors of a mirror array that reflect light into an optical path that intersects a location of the pixel based on an intensity for the pixel.

See discussion of independent claims 1 and 21 above. For at least the reason that neither Brandinger, Berlin nor Ernstoff teaches or suggests a circuit to perform the control recited in claim 29, these references likewise fail to teach a processor to perform this control when executing instructions. Therefore, for at least this reason, claim 29 overcomes the § 103(a) rejections; and thus, withdrawal of the § 103(a) rejections of claim 29 is requested.

Rejections of Claims 30-31 and 33:

As amended, the article of independent claim 30 includes a computer-readable storage medium that stores instructions to when executed cause a computer to control a mirror array to produce a projected image. The projected image including pixels, and the mirror array includes mirrors. The instructions when executed cause the computer to for each pixel of the image control the mirror array to control the number of the mirrors that reflect light into an optical path that intersects a location of the pixel based on an intensity for the pixel.

See discussion of independent claims 1 and 21 above. For at least the reason that neither Ernstoff, Berlin nor Brandinger teaches or suggests the control that is recited in line 30, none of these references teaches or suggests the instructions of independent claim 30.

Claims 31 and 33 are patentable for at least the reason that these claims depend from an allowable independent claim. Therefore, for at least the reasons that are set forth above, withdrawal of the § 103(a) rejections of claims 30-31 and 33 is requested.

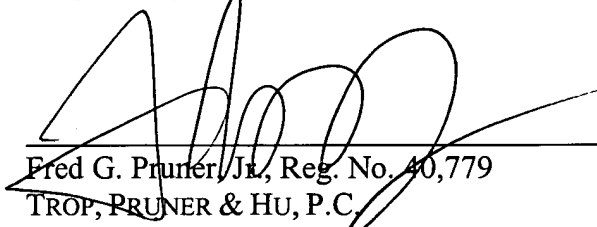
CONCLUSION

In view of the foregoing, withdrawal of the § 103 rejections and a favorable action in the form of a Notice of Allowance are requested. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504 (ITL.1035US).

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2/25/05

Respectfully submitted,



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